

REMARKS

Applicant forwards certified copies of the applications relied on for priority.

The independent claims have been amended to more specifically define Applicant's contribution to the art. In the claims, the phrase "collection-related sound sources" covers both the sound sources that are members of the collection and the collection representing sound source; the phrase "sound sources unrelated to the collection" covers all the other sound sources in the audio field.

Claims 12 and 15 have been amended by deletion of the phrase "if any" because claim 1 now calls for the presence of sound sources unrelated to the collection. Claim 15 has additionally been amended to restrict the change in presentation to a change of positioning. Other claims have been amended to cure antecedent problems.

The apparatus claims have been amended to assure infringement when the goods are sold, prior to being put into use. Claims 42-45 have been added to provide Applicant with the protection to which he is deemed entitled.

The amended and newly added claims distinguish over the art of record. The independent claims define features not disclosed by or made obvious by Schmandt. Before analyzing the differences between

the independent claims and Schmandt, a discussion of this reference is undertaken.

The Schmandt article, "Audio Hallway" concerns a virtual environment produced by synthesized, spatialized source resources. The Schmandt conceptual model is a virtual "audio hallway" (FIG. 3) having virtual rooms off it, alternately to the left and to the right. Each room can be entered through a corresponding virtual doorway. Each virtual room concerns a particular story with which are associated a number of sound streams. When in the virtual hallway, a user who is wearing a headset and a head-tilt/turn detector can hear a respective set of room sounds (called "braided audio") from the nearest doorways. The sounds seem to come from the direction of the doorways of the room. The braided audio coming from a doorway has sound streams relevant to the story associated with the room beyond the doorway. The user virtually moves up and down the hallway by tilting his head forward or backward to adjust the synthesized positions of the braided audio sounds so the user believes he is moving along the hallway. By stopping next to a doorway and tilting his head to the appropriate side, the user virtually passes through the doorway into the virtual room.

Entering a virtual room completely changes the audio environment from the hallway environment to a room environment. Thus, all the braided audios heard in the hallway disappear and are

replaced by a set of angularly spaced sound sources (FIG. 5). The angularly spaced sound sources are about the stories associated with the rooms. Only some of these sound sources are active at any one time. The user can change which sound sources are active by turning his head. Only the sound sources nearest to the facing direction of the user are active.

Hence, Schmandt effectively discloses selecting an audio braid when in the virtual hallway in order to virtually enter the corresponding virtual room. In other words, selecting an audio braid causes the audio virtual environment to change. This is the same effect as following a link in an audio browser to move from one audio page to another. The hallway and room are two completely distinct audio environments.

Furthermore, the change in environment from the hallway to a room is accompanied by a change in control paradigm. No longer does tilting of the user's head cause perceived movement along the hallway. Instead, rotation of the user's head relative to the ground plane results in a change in which the angularly spaced sound sources within the room are activated. The user is left in no doubt that the virtual environment has changed.

In contrast, amended claim 1 retains the same audio environment upon the collection of sound sources being expanded and collapsed. This audio environment is provided by the other source sounds. The

method of claim 1 and the apparatus of independent claims 16, 29, 42, and 44 produce a very different experience from that of Schmandt. In the claimed arrangement, the collection sound sources can be collapsed to reduce the density of sound sources in an existing environment, and then expanded again.

Based on the foregoing, Schmandt does not anticipate amended claims 1, 16, or 29 or new claims 42-45, by itself or in combination with the other art of record. Furthermore, the claims are not made obvious by Schmandt, since the whole paradigm of Schmandt is based on changing between the hallway environment and the room environment. The remaining references do not overcome this deficiency of Schmandt. If the "entering" of a room were to result in the audio files associated with that room being presented in the hallway, a very confusing mixed metaphor environment would be produced. For this reason alone, a person of ordinary skill in the art would not consider modifying Schmandt to bring it within the scope of amended claim 1. Furthermore, in Schmandt, the change from the hallway environment to the room environment is accompanied by a change in control. It would be very difficult to use the same control in the hallway and in the room because it is necessary to switch environments completely. This is a further disincentive to modify Schmandt in the direction of the independent claims.

There is no obvious way of producing the functionality of a Schmandt room within the context of a Schmandt hallway. A person skilled in the art simply would not consider modifying Schmandt to mix the hallway and room environments, knowing that it would be highly confusing to the user and contrary to the very purpose of the Schmandt method and apparatus to simulate different conditions in virtual rooms and a virtual hallway.

Schmandt does not seem to disclose any way of reversing the change from the hallway environment to the room environment. That is, Schmandt has no disclosure of how to exit a room and move back into the hallway. Thus, Schmandt does not actually appear to disclose collapsing a collection of source sources.

Applicant cannot agree that Schmandt discloses the features of dependent claims 12 and 15. Claim 12 specifies, among other things, that the collection-related sound sources are relative to one audio-field reference, and positioning the other sound sources relative to one or more further audio-field references. The Office Action does not appear to have said anything about the audio-field references of the collection-unrelated sound sources.

Claim 15 concerns changing the presentation of the sounds unrelated to the collection upon expansion of the collection. The Examiner argues that this feature is anticipated by muting the audio braids when a room is entered. This argument no longer holds, since

amended claim 1 requires sounds unrelated to the collection to remain present in the audio field. Claim 15 is limited to changing the *positioning* of the sounds rather than simply the presentation of the sounds.

The remaining claims depend from the independent claims and are allowable for the same reasons as advanced for the claims upon which they depend.

The Sibbald and McKiel patents do not cure the noted deficiencies in Schmandt.

Claim 42 is similar to claim 29 but does not include sound sources and says the various functions are performed by a processor arrangement. Claim 44 is a combination of the store of claim 26 and a processor arrangement for performing the method of claim 1.

In view of the foregoing amendments and remarks, favorable reconsideration and allowance are respectively requested and deemed in order.

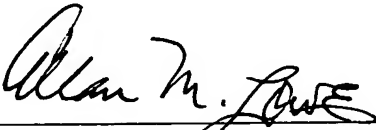
To any extent necessary, Applicants hereby request an extension of time in which to file this paper. The Commissioner is hereby

authorized to charge any omitted fees, including extension of time fees, or to credit any overpayment to Deposit Account 07-1337.

Respectfully submitted,

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On March 23, 2004

